

Application Serial Number: 10/709,014
Supplemental Amendment Dated: 12/01/2005
Office Action Dated: 04/22/2005

Docket Number: TW-0004

AMENDMENTS TO THE CLAIMS

Please amend claims 1, 2, 4, 6, 7, 9, and 14 as follows.

Please cancel claims 3, 12, 13, and 15-17.

Please add new claims 21-25.

Please replace the claims with the following listing of the claims.

Listing of the Claims:

The listing of claims will replace all prior versions and listings of claims in the Application:

1. (Currently Amended) A hand-held device for monitoring a ~~patient's~~ patient's blood pressure, comprising:

a removable, hand-held component configured to be held proximal to the patient's skin;

an optical module mounted on the hand-held component comprising an optical source component and a first optical sensor that configured to generate generates a first set of information when the hand-held component is held proximal to the patient's skin;

~~a flexible, thin film pressure sensor~~ an electrical sensor mounted on the hand-held component and comprising an electrode pair configured to that generates a second set of information when the hand-held component is held proximal to the patient's skin; and

a processing module, configured to receive the first and second sets of information and comprising a processor that processes this information calculates a time difference between components of the first set of information and the second set of information and compares the time difference to a mathematical model to calculate a blood pressure value.

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2. (Currently Amended) The device of claim 1, wherein the ~~flexible, thin-film pressure~~ electrical sensor is a sensor that generates the second set of information in response to a ~~applied force or pressure~~ body-generated electrical signal.

Claim 3 is cancelled.

4. (Currently Amended) The device of claim [[3]] 2, wherein the ~~flexible, thin-film pressure~~ electrical sensor is configured to generate a time-dependent ~~pressure~~ electrical waveform ~~that varies in response to an applied force or pressure~~ in response to the body-generated electrical signal.

5. (Original) The device of claim 1, wherein the processing module further comprises an analog-to-digital converter.

6. (Currently Amended) The device of claim 5, wherein the ~~flexible, thin-film pressure~~ electrical sensor is in electrical contact with the analog-to-digital converter.

7. (Amended) The device of claim 1, wherein the optical source component of the optical module further comprises a first optical source that generates visible radiation, and a second optical source that generates infrared radiation.

8. (Original) The device of claim 1, wherein the optical sensor is a photodiode.

9. (Currently Amended) The device of claim 8, wherein the photodiode is configured to generate a photocurrent after detecting radiation generated by the first optical source and ~~the second optical sources~~ source.

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10. (Original) The device of claim 9, wherein the processing module further comprises an analog-to-digital converter configured to receive and process the photocurrent.

11. (Original) The device of claim 9, wherein the processing module comprises firmware that processes the photocurrent to generate a time-dependent optical waveform.

Claim 12 is cancelled.

Claim 13 is cancelled.

14. (Currently Amended) The device of claim [[12]] 1, wherein the processor further comprises computer-readable firmware that processes the first set of information to additionally determine pulse oximetry and heart rate.

Claim 15 is cancelled.

Claim 16 is cancelled.

Claim 17 is cancelled.

18. (Original) The device of claim 1, further comprising a serial interface.

19. (Original) The device of claim 18, wherein the serial interface is configured to send information to an external device.

20. (Original) The device of claim 18, wherein the serial interface is configured to accept calibration information.

21. (New) A body-worn patch for monitoring a patient's blood pressure, comprising:

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an optical module comprised by the body-worn patch comprising an optical source component and a first optical sensor configured to generate a first set of information when the body-worn patch is attached to the patient's skin;

an electrical sensor comprised by the body-worn patch and comprising an electrode pair configured to generate a second set of information when the body-worn patch is attached to the patient's skin; and

a processing module, configured to receive the first and second sets of information and comprising a processor that calculates a time difference between components of the first set of information and the second set of information and compares the time difference to a mathematical model to calculate a blood pressure value.

22. (New) A hand-held device for monitoring a patient's blood pressure, comprising:

a removable, hand-held component configured to be positioned proximal to the patient's skin;

a pressure-delivering component configured to apply a pressure to the patient's skin;

an optical module mounted on the hand-held component comprising an optical source component and a first optical sensor configured to generate a first set of information while the pressure is applied to the patient's skin;

an electrical sensor mounted on the hand-held component and comprising an electrode pair configured to generate a second set of information; and

a processing module, configured to receive the first and second sets of information and comprising a processor that calculates a time difference between

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components of the first set of information and the second set of information and compares the time difference to a mathematical model to calculate a blood pressure value.

23. (New) A method for measuring a blood pressure value from a patient, comprising the steps of:

1) holding a removable, hand-held component proximal to the patient's skin, the removable, hand-held component comprising: i) an optical component comprising an optical source component and a first optical sensor configured to generate a first set of information while the hand-held component is held proximal to the patient's skin; ii) an electrical component comprising an electrode pair configured to generate a second set of information while the hand-held component is held proximal to the patient's skin; and iii) a processor operating an algorithm that processes the first set of information and the second set of information;

2) initiating a measurement wherein the optical component generates the first set of information, and the electrical component generates the second set of information; and

3) processing the first set of information and the second set of information with the processor by calculating a time difference between components of the first set of information and the second set of information and comparing the time difference to a mathematical model to calculate a blood pressure value.

24. (New) A method for analyzing a blood pressure value from a patient, comprising the steps of:

1) holding a removable, hand-held component proximal to the patient's skin, the removable, hand-held component comprising: i) an optical component comprising an

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optical source component and a first optical sensor configured to generate a first set of information while the hand-held component is held proximal to the patient's skin; ii) an electrical component comprising an electrode pair configured to generate a second set of information while the hand-held component is held proximal to the patient's skin; and iii) a processor operating an algorithm that processes the first set of information and the second set of information;

2) initiating a measurement wherein the optical component generates the first set of information, and the electrical component generates the second set of information;

3) processing the first set of information and the second set of information with the processor by calculating a time difference between components of the first set of information and the second set of information and comparing the time difference to a mathematical model to calculate a blood pressure value; and

4) wirelessly transmitting the blood pressure value to an external receiver.

25. (New) The method of claim 24, further comprising the step of transmitting the blood pressure value to an Internet-accessible computer system.